

Report of the Quinquennial Review Team (QRT) for the period of 2011-12 to 2018-19

1	Name and location of KVK	Krishi Vigyan Kendra, Bokaro, P.O.- Petarwar, Dist- Bokaro (Jharkhand) Pin-829121
2	Name of the Head of KVK with Postal address and Telephone No.	Sri Uday Kumar Singh, Krishi Vigyan Kendra, Bokaro, P.O.- Petarwar, Dist- Bokaro (Jharkhand) Pin-829121 Phone- 06549-265048, Mobile: 09431126991
3	Name of District and State Head Qtrs.	Bokaro, Ranchi
4	Sanction order No. and date	Letter No. of ICAR-F. No. 6-5/2000-AE dated: 24.06.2004
5	Date of Establishment	24.06.2004
6	Name and Address of the Host Instt.	Birsa Agricultural University, Ranchi, Jharkhand, Pin- 834006
7	Mandate and Functions of KVKs	The mandate of KVK is Technology Assessment and Demonstration for its Application and Capacity Development. To implement the mandate effectively, the following activities are envisaged for each KVK 1. On-farm testing to assess the location specificity of agricultural technologies under various farming systems. 2. Frontline demonstrations to establish production potential of technologies on the farmers' fields. 3. Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies. 4. To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district. 5. Provide farm advisories using ICT and other media means on varied subjects of interest to farmers 6. KVK functioning as Knowledge and Resource Centre at District Level. In addition, KVKs produce quality technological products (seed, planting material, bio-agents, livestock) and make it available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programs within the mandate of KVK.

8. Staff Position (based on Sanctioned Strength) and their mobility

S N	Designation	No. of Sanctioned Post	Name of person	Present Pay scale (Rs.)	Date of Joining	Dt. of Leaving
1.	Sr. Scientist & Head	1	-	-	-	-
2.	Scientist (Agronomy)	1	Sri Uday Kumar Singh	15600-39100 Basic: 31780.00	19.07.2004	
3.	Scientist (Horticulture)	1	Dr. Anil Kumar	15600-39100 Basic: 34490.00	19.07.2004	
4.	Scientist (Agril. Engg.)	1	Er. Vinay Kumar	15600-39100 Basic: 31780.00	20.07.2004	
5.	Scientist (Home Science)	1	Dr. Nandana Kumari	15600-39100 Basic: 31780.00	19.07.2004	
6.	Scientist (Plant Protection)	1	Mrs. Neena Bharti	15600-39100 Basic: 31780.00	20.07.2004	
7.	Farm Manager	1	-	-	-	-
8.	Lab Assistant	1	Dr. Rupa Rani	9300-34800 Basic: 21250.00	16.03.2005	
9.	Programme Assistant (Computer)	1	Sri Naman Kandulna	9300-34800 Basic: 20300.00	20.07.2004	
10.	Accountant/Assistant	1	Sri Abhay Kumar Singh	11000.00/Month (Contractual)		
11.	Stenographer	1	Sri Ratnesh Kumar Mishra	9000.00/Month (Contractual)		
12.	Driver 1	1	Sri Ramchandra Lohar	9000.00/Month (Contractual)		
13.	Driver 2	1	Sri Panchanand Mahto	9000.00/Month (Contractual)		
14.	Supporting Staff 1	1	Sri Ruplal Marandi	7000.00/Month (Contractual)		
15.	Supporting Staff 2	1	Sri Durga Prasad Mahto	7000.00/Month (Contractual)		

9. Allocation under various Heads

Budget head	Preceding plan (Utilisation-Rs in lakh)		Current plan Utilization (Rs in lakh)				
Pay & All							
TA							
Rec. Contingency							

NRC							
Works							
Vehicle							
Equipment							
Library							
Other, if any							

NRC= Non- recurring contingency

10. Infrastructural facilities available at KVK

Items	Details									
Land	S. No.		Item		Area (ha)					
	1		Under Buildings & Demonstration units and other encroachment		2.0					
	2.		Under Crops		6					
	3.		Orchard/Agro-forestry (Mother plant nursery)		1					
	4.		Technology park		0.4					
	5.		Pond		0.2					
			Unutilized land due to undulating		0.4					
			Total		10					
	Office Building	SI No.		Name of building		Plinth area (sq.m)		Source of funding		Status
1.		Administrative Building		500		ICAR		Completed		
Farmers' Hostel	SI No.		Name of building		Plinth area (sq.m)		Source of funding		Status	
	1.		Farmers' Hostel		300		ICAR		Completed	
Vehicle	Type of vehicle		Year of purchase		Cost (Rs.)		Total km. Run		Present status	
	Jeep		2005		431129.00		320000 K.M.		Required to be replaced	
	Tractor		2006		361200.00		1200 hr		Time to time repairing is	

					needed
Tractor	Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
	Tractor	2006	361200.00	1200 hr	Time to time repairing is needed
e-connectivity	e-connectivity has been done through ERNET India but now not in working condition.				
Demo unit etc					
Any other	Well furnished Soil Testing Lab established at KVK.				

11 . Budget (Rs. In lakh)

a. ICAR

Head	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	TOTAL
Recurring	7.50	9.48	13.00	7.30	14.50	12.05	13.75	9.00	86.58
Non-Recurring	1.05	-	-	-	1.50	-	-	3.50	6.05
TA	0.50	1.00	0.75	0.50	1.00	1.50	1.25	1.00	7.50
Pay & Allowances	77.42	52.45	56.30	60.00	58.00	60.00	59.88	62.00	486.85

b. Other than ICAR:

c. Any other:

12. Agro climatic zone and jurisdiction (District/State Boundaries):

a. Climate:

The state of Jharkhand has been divided into three zones namely

Zone (IV) – Central & North Eastern plateau zone.

Zone (V) – Western Plateau Zone.

Zone (VI) – South Eastern Plateau Zone.

Bokaro district comes under Agro Climatic Zone IV.

The climate in general is classified as sub-humid in nature with large winter water deficiency. Climate of the cropping season changes from hot to humid during major parts

of *Kharif* (June to Sept.), and cold to Arid during *Rabi* (Oct. to March). The temperature generally ranges from 2⁰C (Minimum) to 45⁰C (Maximum). The hottest month of the district is May to June 2nd week and December and January is the coldest months.

There is a large variation in the amount of total rainfall (1000 to 1500mm). The normal rainfall of the district is 1275mm against the state average of 1340 mm. About 80 percent of the total rainfall occurs during the four monsoon month of June to Sept. The drainage systems are part of Damodar and Swarnrekha river system. Important rivers are Bhera, Gobai, Sadhai, Garga, Kadma and Khanjo which drain into Damodar river system.

b. Traditional crops:

Cereal : Rice, Maize, Wheat, Bajra, Jowar and finger millies.

Pulses : Pigenopea, Chickpea, Kulthi, Pea, Mongbean and Blackgram.

Oilseeds : Groundnut, Rapeseed, Mustard and Linseed.

Vegetables : Potato Onion, Cabbage, Cauliflower, Brinjal, Tomato, Frenchbean, Radish, Cucurbit chilli, ladysfinger.

Fruits : Mango, Tamarind, Guava, Jamun, Papaya, Kendu, Jackfruits, Anola, Bel, Custard apple, Circus etc.

c. Cropping system/situation:

Agriculture + Horticulture (Vegetable) + Animal Husbandry

Agriculture + Horticulture (Vegetable)

Agriculture + Animal Husbandry

Agriculture + Horticulture (Vegetable) + Animal Husbandry+ Fishery

Agriculture + Horticulture (Vegetable) + Animal Husbandry+ Lac culture

Agriculture + Animal Husbandry+ Lac culture

Agriculture + Labour

d. Any other:

13. Major Activities Undertaken

- i. Technology Assessment and refinement through on farm trials.
- ii. Training for practicing farmers,rural youths and extension functionaries.
- iii. Front line demonstration.
- iv. Seed production at KVK farm and farmers participatory seed production programme,seedhub programme
- v. Establishment of technology park,metrology centre,mother plant orchard ,soil testing laboratory.
- vi. Advisory and diagnostic services.
- vii. Other extension activities such as Kisan gosthi, field day ,exposure visit,kisan melas,radio and TV talk formation and technology back stopping to SHG and kisan clubs.
- ix. Sankalp Se Siddhi Programme.
- x. Kisan Kalyan Abhiyan Phase -I and Phase –II
- xi. Celebration of Swachhta Pakhwada, Kisan Mahila Diwas, Kisan Diwas, World Soil Health Day
- xi. Inauguration of PM KISAN Samman Nidhi

14. SWOT (Strengths, Weakness, Opportunities and threats) Analysis of KVKs

Sl No.	Strengths	Sl No.	Weakness
1.	Dedicated Scientist and Staff Member	1.	Lack of proper infrastructure facility such as irrigation, Demonstration unit, diagnostic laboratory
2.	Well qualifiled experts of different discipline at one place	2.	It situated on border line of the district.
3.	Good rapo wit farmers	3.	Vacant position
4.	Strong linkage and collaboration with line departments		
5.	Well furnished training hall and farmers hostel for trainees.		
6.	Well furnished office rooms for scientist and staff		
	Opportunities		Threats
1.	Commercialization of agriculture	1.	Undue political interference

2.	Modernization of agriculture	2.	Mandate over lapping and conflict.
3.	Technological back stopping from University		
4.	Scope to promote food processing Enterprise Development		

15. Brief account of progress made towards modernization of office, equipments, staff amenities, Transport, O& M reforms etc.

16. Efforts and achievements made in the last eight years towards upgradation of knowledge and skills of staff of KVK i.e. Human Resource Development (Training of Staff in Trainers' Training Centres and other Institutes etc).

2011-2012

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday kumar Singh	I/C programme Coordinator & SMS Agronomy	National conference of KVKs	03-05 Dec.2011 ICAR
Sri Uday kumar Singh	I/C programme Coordinator & SMS Agronomy	EFC for XIIth plan 2012-2017	21.01.2012 ZPD Zone II,Kolkata
Miss Priyanka Verma	Farm Manager	Training cum workshop on production of planting materials through improved propagation methods	BAU,Ranchi 16-18 Jan.2012
Dr. S.K.Jha	SMS, Soil Science	Use of ICT for Rapid Dissemination Appropriate Farm Technologies	BAU, Ranchi, 06-08 Feb. 2012
Sri Naman Kandulna	Computer Assistant	Use of ICT for Rapid Dissemination Appropriate Farm Technologies	BAU, Ranchi, 06-08 Feb. 2012
Dr. S.K.Jha	SMS, Soil Science	21 days training prog. On "Application of Remote Sensing and GIS for watershed Characterization and Resource Planing"	NBBSS & LUP (ICAR) Kolkata, 20 Feb. 2012 to 11 March 2012
Sri Uday Kr. Singh	I/C programme Coordinator & SMS Agronomy	State level workshop	ZPD, Zone –II, Kolkata, 28.02.2012
Sri Vinay Kumar	SMS, Agril Engg.	Operation and maintenance of farm implements and machineries	BAU, Ranchi, 12 – 14 March 2012
Dr. S.K.Jha	SMS, Soil Science	Workshop on DRMR programme	DRMR, Bharatpur, Rajasthan, 19-20 March 2012
Mrs. Neena Bharti	SMS, Plant Protection	Climate Resilient Agriculture in Jharkhand	BAU, Ranchi 24.03.2012

2012-13

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday kumar Singh	I/C programme Coordinator & SMS Agronomy	Zonal workshop of KVKs zone – II	ZPD, Kolkata 16-18 April 2012
Sri Uday kumar Singh	I/C programme Coordinator & SMS Agronomy	Review meeting of KVK	BAU, Ranchi 07-11-2012
		7 th National Conference of KVKs	PAU, Ludhiana 20-22 Nov. 2012
		Review meeting of KVK	BAU, Ranchi 21 Jan 2013
		Training, Integrated crop management	BAU, Ranchi 22-24 Jan 2013
Dr. Anil Kumar	SMS, Horticulture	7 th National Conference of KVKs	PAU, Ludhiana 20-22 Nov. 2012
		Workshop on Panchayati Raj	BAU, Ranchi 12-13 Dec. 2012
		Training , Market led Horticulture	BAU, Ranchi 4-6 Feb. 2013
Dr. S.K.Jha	SMS, Soil Science	Training, Innovative communication strategies for KVK	BAU, Ranchi 3-5 Jan 2013
Sri Vinay Kumar	SMS, Agril. Engg.	Training	Directorate or research on women in Agriculture Bhubneshwer, Orissa 11-15 Sept. 2012
		Training- cum- Workshop	ZPD,Zone-II Kolkata 21-22 Dec. 2012
		Workshop	BAU, Ranchi 15-17 Jan. 2013
Miss Priyanka Verma	Farm Manager	Training, Sustainable Livestock production	BAU, Ranchi 6-8 March, 2013
Mrs. Neena Bharti	SMS, Plant Protection	Workshop on Panchayati Raj	BAU, Ranchi 12-13Dec. 2012
		Training, Integrated crop management	BAU, Ranchi 22-24 Jan 2013
Dr. Nandana Kumari	SMS, Home Science	Workshop ITK	BAU, Ranchi 14-16 Jan 2013
Sri Naman Kandulna	Computer Assistant	7 th National Conference of KVKs	PAU, Ludhiana 20-22 Nov. 2012

Year 2013-14

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday Kumar Singh	I/C programme Coordinator & SMS Agronomy	National Conference of KVKs 2013	University of Agricultural Sciences, Bangalore, Karnataka, 23 Oct. 2013 to 25 Oct. 2013
Mrs. Neena Bharti,	SMS, Plant Protection	Summer School “Horticulture based crop diversification option for livelihood security in tribal area ”	ICAR Research Complex for Eastern Region Research Centre Plandu, Ranchi, (Jharkhand) 21 May 2013 to 10 June 2013
Dr. Nandana Kumari,	SMS, Home Science	National Seminar on “Innovation in Traditional Agriculture”	College of Agriculture of G.B.P.U.A.T., Pantnagar 15 Nov. 2013 to 17 Nov. 2013
Dr. Sudhir Kr. Jha,	SMS, Soil Science	Wireless Sensor Network Workshop and National Steering Committee meeting	TRA, Jorhat, Asam 27 May 2013 to 29 May 2013
Dr. Anil Kumar	SMS, Horticulture	Workshop on “Baudhik Sampada Ke Adhikar”	ICAR Research Complex for Eastern Region Research Centre Plandu, Ranchi, (Jharkhand) 12 Sept. 2013
Sri Uday Kumar Singh	I/C programme Coordinator & SMS Agronomy	Workshop on Precision farming	ICAR Research Complex for Eastern Region Research Centre, Patna (Bihar) 18 Nov. 2013 to 19 Nov. 2013
Dr. Sudhir Kr. Jha,	SMS, Soil Science	Training prog on “Diagnosis of Soil for Production”	Institute of Forest Productivity, Lalguwa, Ranchi 10 Jan. 2014 to 12 Jan. 2014

Year: 2014-15

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Dr. Sudhir Kumar Jha	SMS, Soil Science	Zonal Workshop at NIRJAFT, Kolkata	ZPD, ICAR, Zone-II, Kolkata 2-3 June 2014
Dr. Sudhir Kumar Jha	SMS, Soil Science	Writing success stories	ZPD, ICAR, Zone-II, Kolkata 27-29 Aug. 2014
Sri Uday Kumar Singh	I/C P.C.-cum-SMS, Agronomy	Training on PPVR&FRA	ZPD, ICAR, Zone-II, Kolkata, 15 Oct. 2014
Dr. Sudhir Kumar Jha	SMS, Soil Science	Review Workshop of IPNI	ZPD, ICAR, Zone-II, Kolkata, 22 Nov. 2014
Dr. Sudhir Kumar Jha	SMS, Soil Science	Training cum- Workshop on best management practices	DEE, BAU, Ranchi, 6-7 Jan. 2015
Dr. Nandana Kumari	SMS, (Home Science)	Quality Animal product production: Farm to Fork	ZPD, ICAR, Zone-II, Kolkata, 09-10 Jan., 2015

		Approach	
Sri Uday Kumar Singh	I/C P.C.-cum-SMS, Agronomy	Training on forward marketing	DEE, BAU, Ranchi, 16-17 Jan.2015
Mrs. Neena Bharti	SMS Plant Protection	Integrated farming system for sustainable livelihood security	DEE, BAU, Ranchi, 27-28 Jan. 2015
Dr. Nandana Kumari	SMS, (Home Science)	Frontiers in Fish Farming	ZPD,ICAR, Zone-II, Kolkata, 29-30 Jan., 2015
Dr. Anil Kumar	SMS, Horticulture	Production and marketing of hybrid seed of selected vegetable	DEE, BAU, Ranchi, 5-6 Feb. 2015
Dr. Sudhir Kumar Jha	SMS, Soil Science	Soil health management in rice and rice based cropping system	DEE, BAU, Ranchi 11—12 Feb 2015
Mrs. Neena Bharti	SMS Plant Protection	Climate change mitigation and adaptation	DEE, BAU, Ranchi 21-22 Feb. 2015
Dr. Sudhir Kumar Jha	SMS, Soil Science	Seminar on sustaining soil health balanced fertilization need for reform in fertilizer policy at RK Mission Ranchi	FAI & RK Mission, Ranchi 25 Feb 2015

Year: 2015-16

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday Kr. Singh	Scientist Agronomy- cum- Sr. Scientist & Head	State level workshop for KVKs of Jharkhand	ICAR, ATARI, Kolkata 09-04-2015
Sri Uday Kr. Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	Zonal Workshop of KVKs	ICAR-CIRFI, Barrekpore 26-27 May 2015
Sri Uday Kr. Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	National conference	ICAR RCER, Patna 25-26 July 2015
Sri Uday Kr. Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	Programme on cluster demonstration and PPV & FR	ICAR, ATARI, Kolkata 08-10 Dec. 2015
Sri Uday Kr. Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist &	Demonstration and training programme on Mridaprikshak Kit	KVK, Bokaro 28-01-2016

	Head		
Sri Uday Kr. Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	“Communication & Management Skill for Extension Professionals”	DEE, BAU, Ranchi 18-19 Feb. 2016
Dr. Anil Kumar	Scientist, Horticulture	Demonstration and training programme on Mridaprikshak Kit	KVK, Bokaro 28-01-2016
Er. Vinay Kumar	Scientist, Agril. Engg.	“Advanced Tool and Techniques for Precise Input Application Systems”	CIAE, Bhopal 05-25 Jan. 2016
Dr. Nandana Kumari	Scientist, Home Science	Demonstration and training programme on Mridaprikshak Kit	KVK, Bokaro 28-01-2016
Dr. Nandana Kumari	Scientist, Home Science	National Conference on “Hill Agriculture in Perspective”	G.B.P.U, Pantnagar 26-28 Feb, 2016
Dr. Nandana Kumari	Scientist, Home Science	Livelihood “Improvement of Rural Youth through Livestock and Poultry Based Interventions”	DEE, BAU, Ranchi 04-06 Feb, 2016
Dr. Nandana Kumari	Scientist, Home Science	“New Vistas in Value Addition”	DEE, BAU, Ranchi 25-28 Feb. 2016
Mrs. Neena Bharti	Scientist, Plant Protection	Demonstration and training programme on Mridaprikshak Kit	KVK, Bokaro 28-01-2016
Mrs. Neena Bharti	Scientist, Plant Protection	“Frontiers in diagnosis and management of pest and diseases with quality assurance”	DEE, BAU, Ranchi 08-10 March 2016

Year: 2016-17

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Mrs. Neena Bharti, Scientist, Plant Protection	Scientist, Plant Protection	Workshop on SAFAL	BAU, Ranchi 24-05-2016,
Sri Uday Kumar Singh Scientist (Agronomy- cum- Head)	Scientist Agronomy- cum- Sr. Scientist & Head	Meeting of Seed Hub Programme	ICAR- ATARI, Kolkata 18 Nov. 2016
Sri Uday Kumar Singh Scientist (Agronomy- cum-	Sr. Scientist & Head –cum- Scientist, Agronomy	Review meeting & closing ceremony of International year of pulses 2016	ICAR-IIPR, Kanpur 22 Dec. 2016

Head)			
Dr. Anil Kumar Scientist (Horticulture)	Scientist, Horticulture	Training-cum-workshop on Appropriate Agro forestry Models for Jharkhand	DEE, BAU, Ranchi 10-12 Jan. 2017
Dr. Nandana Kumari Scientist (Home Scientist)	Scientist, Home Science	Training-cum-workshop on Developing Agribusiness Skills Among Farmers for Optimizing Farm Income	DEE, BAU, Ranchi 13-15 Feb. 2017
Er. Vinay Kumar Scientist (Agril. Engg.)	Scientist, Agril. Engg.	Training-cum-workshop Micro Irrigation for Improving Water Use Efficiency and Productivity	DEE, BAU, Ranchi 18-20 Jan. 2017
Mrs. Neena Bharti, Scientist, Plant Protection	Scientist, Plant Protection	Ways and means for doubling farmers income	DEE, BAU, Ranchi 8-10 March 2017,

Year: 2017-18

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday Kumar Singh	Scientist Agronomy- cum- Sr. Scientist & Head	Zonal Workshop of KVKs	ICAR- ATARI, Zone-II 14-16 April 2017
Er. Vinay Kumar,	Scientist (Agril.Engg.)	International Conference on “Advances in Agricultural and Applied Science for Promoting Food Security”	Society for Agriculture Innovation & Development, Ranchi, Kathmandu, Nepal May 13-15, 2017
Mrs. Neena Bharti,	Scientist (Plant Protection)	International Conference on “Advances in Agricultural and Applied Science for Promoting Food Security”	Society for Agriculture Innovation & Development, Ranchi, Kathmandu, Nepal May 13-15, 2017
Dr. Anil Kumar	Scientist (Horticulture)	International Conference on “Advances in Agricultural and Applied Science for Promoting Food Security”	Society for Agriculture Innovation & Development, Ranchi, Kathmandu, Nepal May 13-15, 2017
Er. Vinay Kumar,	Scientist (Agril.Engg.)	Regional Workshop on Skill Development	RKM Institute of Culture, Golpur, Kolkata, 25 th May 2017
Er. Vinay Kumar,	Scientist (Agril.Engg.)	workshop on Soil Testing Kit (Minilab)	WBUAFS, Kolkata , 12 th August, 2017
Sri Uday Kumar Singh	Scientist (Agronomy- cum- Head)	Workshop on Seed Hub	IIPR, Kanpur , 6-8 November 2017
Er. Vinay Kumar,	Scientist (Agril.Engg.)	“National Conference on Promoting & Reinvigorating Agri-Horti, Technological	PRAGATI at Dhanbad, Jharkhand , 11-12 November 2017

		Innovations, PRAGATI-2017”	
Mrs. Neena Bharti,	Scientist (Plant Protection)	“National Conference on Promoting & Reinvigorating Agri-Horti, Technological Innovations, PRAGATI-2017”	PRAGATI at Dhanbad, Jharkhand , 11-12 November 2017
Dr. Nandana Kumari,	Scientist (Home Science)	“National Conference on Promoting & Reinvigorating Agri-Horti, Technological Innovations, PRAGATI-2017”	PRAGATI at Dhanbad, Jharkhand , 11-12 November 2017
Dr. Anil Kumar	Scientist (Horticulture)	“National Conference on Promoting & Reinvigorating Agri-Horti, Technological Innovations, PRAGATI-2017”	PRAGATI at Dhanbad, Jharkhand , 11-12 November 2017
Dr. Nandana Kumari,	Scientist (Home Science)	Winter School on Advances in ICT in Agriculture Extension.	BAU, Sabour, Bhagalpur, Bihar , 4-24 Jan. 2018
Er. Vinay Kumar,	Scientist (Agril.Engg.)	National Conference On Livelihood and Food Security	, Society for Agriculture Innovation & Development, Ranchi at Patna, 27-28 Jan. 2018
Mrs. Neena Bharti,	Scientist (Plant Protection)	National Conference On Livelihood and Food Security	, Society for Agriculture Innovation & Development, Ranchi at Patna, 27-28 Jan. 2018
Dr. Nandana Kumari,	Scientist (Home Science)	National Conference On Livelihood and Food Security	, Society for Agriculture Innovation & Development, Ranchi at Patna, 27-28 Jan. 2018
Dr. Anil Kumar	Scientist (Horticulture)	National Conference On Livelihood and Food Security	, Society for Agriculture Innovation & Development, Ranchi at Patna, 27-28 Jan. 2018
Dr. Anil Kumar	Scientist (Horticulture)	Winter School on “ New Initiative for Veterinary Extension, ARYA, Farmer First and MGMG”	Department of A.H. Extension Education, Bihar Veterinary Collage Patna., 30 October – 19 November 2017
Er. Vinay Kumar,.)	Scientist (Agril.Engg)	National Conference on “Improving Income of Farmers through Agriculture & Aquaculture through Development Interventions”	ICAR-CIFA Bhubaneswar. , 05th to 7th January 2018
Dr. Anil Kumar	Scientist (Horticulture)	Review meeting on CFLD on oilseed & pulses at to be held from.	ICAR- ATARI, Patna , 8-9 January, 2018
Er. Vinay Kumar,	Scientist (Agril.Engg.)	Workshop on Digital farming using mKRISHI Platforms	ICAR- ATARI, Patna , 7 th February 2018
Sri Uday Kumar	Scientist		ICAR-IARI, New Delhi ,

Singh	(Agronomy-cum- Head)	Biennial National Conference of KVKs	16-17 March, 2018.
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Year: 2018-19

Name of scientist/staff	Designation	Title of training/Workshop	Venue and date
Sri Uday Kumar Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	Zonal Workshop of KVKs	ICAR-ATARI, Patna, Zone-IV, 26-27 May 2018
Sri Uday Kumar Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	Workshop on CFLD	ICAR-ATARI, Patna, Zone-IV, 13-14 Oct. 2018
Sri Uday Kumar Singh	Scientist Agronomy- cum- Sr. Scientist & Head	International Conference	30 oct.-01 Nov. 2018
Sri Uday Kumar Singh	Scientist Agronomy- cum- Sr. Scientist & Head	National Seminar on “Integrated farming System for Enhancing Farmer’s Income and National Security”	ICAR-ATARI, Patna, Zone-IV, 5-7 Dec. 2018
Er. Vinay Kumar	Scientist, Agril.Engg.	International Conference on “Food Security and Sustainable Agriculture”	Society for Agriculture Innovation & Development, Ranchi (SAID), 21-24 Dec. 2018
Dr. Anil Kumar Scientist, Horticulture	Scientist , Horticulture	Workshop on Action Plan Finalization of OFTs	ICAR-ATARI, Patna, Zone-IV, 16-17 Feb. 2019
Mrs. Neena Bharti Scientist, Plant Protection	Scientist, Plant Protection	Workshop on Action Plan Finalization of OFTs	ICAR-ATARI, Patna, Zone-IV, 16-17 Feb. 2019
Sri Uday Kumar Singh Sr. Scientist & Head	Scientist Agronomy- cum- Sr. Scientist & Head	Workshop on Action Plan Finalization of OFTs	ICAR-ATARI, Patna, Zone-IV, 18-19 Feb. 2019
Er. Vinay Kumar Scientist, Agril. Engg.	Scientist, Agril.Engg.	Workshop on Action Plan Finalization of OFTs	ICAR-ATARI, Patna, Zone-IV, 01-02 March 2019
Dr. Nandana Kumari	Scientist, Home Science	Workshop on Action Plan Finalization of OFTs	ICAR-ATARI, Patna, Zone-IV, 06-07 March 2019
Sri Naman Kandulna	Computer Assistant	Training on “Information Dissemination, Sensing Technologies and Internet of Things”	DEE, BAU, Ranchi, 29-31 March 2019

17. Details of technology refined / generated during the period under review

a) Agriculture, b) Horticulture, c) Livestock, d) Poultry, e) Fishery, f) Any other

Year: 2011-12

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Effect of balance fertilization on sweet potato grown in upland situation.	Farmers practice - No use nutrients T.O. i - 50 % recommended dose of fertilizer T.O. ii - 50 % recommended dose of fertilizer + Lime @ 4 qt/ha in furrow application T.O. iii - 100% recommended dose of fertilizer (Recommended dose of fertilizer = 50:60:60 N:P ₂ O ₅ :K ₂ Okg/ha)	100% recommended dose of fertilizer (Recommended dose of fertilizer = 50:60:60 N:P ₂ O ₅ :K ₂ Okg/ha)	Sweet potato cultivated in 500 ha. With RDF in acidic soil.
2.	Increasing system productivity in medium land through wheat and mustard intercropping with balance dose of nutrients.	Farmer's Practice - (Mixed cropping of wheat & mustard with 90 kg N + 65 kg P ₂ O ₅ /ha) T.O. i - Wheat + mustard (intercropping 8:2) with 90 kg N + 65 kg P ₂ O ₅ /ha) T.O. ii - Wheat + mustard (intercropping 8:2) with 90 kg N + 65 kg P ₂ O ₅ /ha + 40 kg K ₂ O/ha T.O. Iii - Wheat + mustard (intercropping 8:2) with balanced dose of nutrients (100:50:40 N: P ₂ O ₅ :K ₂ Okg/ha)		
3.	Effect of transplanting techniques on the productivity of paddy in medium land situation.	Farmers practice - (5-6 seedlings/ hill transplanting of 30-35 days old seedling. T.O. i - Recommended transplanting 2-3 seedlings/ hill of 21 days old seedling. T.O. ii - SRI 12 days old seedling, 1 seedlings/ hill at	SRI 12 days old seedling at 1 seedlings/ hill at 25x25	6000 ha area covered under SRI in the district

		25x25 cm		
4.	Effect of brown manuring on productivity of upland rice.	Farmers practice - Sole upland rice + (20kg N + 16 kg P ₂ O ₅) at the time sowing T.O. i - Farmer practice + brown manuring with dhaincha @ 25 kg/ha (Spraying of 2, 4-D, 25-30 days after sowing @ 2 lit/ha) T.O. ii - Sole upland rice + recommended dose of fertilizer (60:30:20)	Upland rice + recommended dose of fertilizer (60:30:20)	
5.	Chemical control of stem borer in kharif maize under rainfed condition.	Farmers practice - Use of Endosulfan @ 2 ml/lit water after infestation T.O. i - Carbofuran 3 G @ 20 kg/ha at 20 DAS. T.O. ii - 2 Spray of imidacloprid @1 ml/2lit water at 20 & 35 DAS T.O. iii - Carbofuran 3 G @ 20 kg/ha at 20 DAS + one spraying of imidacloprid @ 1 ml/2litwater at 35 DAS	Carbofuran 3 G @ 20 kg/ha at 20 DAS + one spraying of imidacloprid @ 1 ml/2litwater at 35 DAS	
6.	Effect of control measures of fruit and shoot borer in brinjal in rabi season.	Farmers practice - Cypermethrin @ 1 ml/lit after appearance of infestation (two spray) Technological option i - Flubendamide 480 SC @1 ml/ 5 lit water at 30 & 50 DAT T.O. ii - - Cartap hydrochloride @ 1gm/lit at 30 & 50 DAT T.O. iii - Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	
7.	Use of weeder to reduce drudgery in weeding of groundnut crops.	Farmer's practice - Mannual weeding by spade T.O. i - Weeding by grubber weeder T.O. ii - Weeding by single wheel hoe weeder	Weeding by single wheel hoe weeder	
8.	Effect of different method of irrigation	Farmer's practice - Furrow irrigation method	Raised bed and furrow irrigation method	

	on yield of tomato crop.	T.O. i -Skip irrigation method T.O. ii -Alternate Skip irrigation method T.O. iii -Raised bed and furrow irrigation method		
9.	Assessment of different varieties of sweet potato in acid soil condition.	Farmer's practice - Use of local variety T.O. i- Shankar T.O. ii- Samrat T.O. iii- Shree Nandani T.O. iv- Pusa safeda	Pusa safeda	Farmers using variety- Pusa Safeda in 600 ha area.
10.	Performance of suitable Ginger based cropping system under irrigated condition in summer season.	Farmers practice - Ginger sole crops T.O. i -Ginger+ Spinach (Mixed cropping) T.O. ii - Ginger+ Spinach (Mixed cropping) + Cauliflower T.O. ii - Ginger+ Amaranths (Mixed cropping) + Cauliflower	Ginger+ Spinach (Mixed cropping) + Cauliflower	

Year: 2012-13

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Standardization of nutrient requirement in SRI paddy	Farmers practice - N 60kg + P ₂ O ₅ 25 kg+ K ₂ O 10 kg/ha + FYM 5 ton/ha T.O. i - RDF (N 80kg + P ₂ O ₅ 40 kg+ K ₂ O 20 kg/ha +FYM 5 ton/ha) T.O. ii - (N 100kg + P ₂ O ₅ 50 kg+ K ₂ O 30 kg/ha[two split] +FYM 5 ton/ha) T.O. iii - (N 120kg + P ₂ O ₅ 60 kg+ K ₂ O 50 kg /ha[two split] +FYM 5 ton/ha)	(N 120kg + P ₂ O ₅ 60 kg+ K ₂ O 50 kg /ha[two split] +FYM 5 ton/ha)	
2.	Use of weeder to reduce drudgery in weeding of groundnut crops	Farmer's practice - Mannual weeding by spade T.O. i -Weeding by grubber weeder T.O. ii -Weeding by single wheel hoe weeder	Weeding by grubber weeder	
3.	Effect of different method of irrigation on yield of tomato crop	Farmer's practice -Furrow irrigation method T.O. i -Skip irrigation method		

		T.O. ii -Raised bed and furrow irrigation method		
4.	Performance of suitable Ginger based cropping system under irrigated condition in summer season	Farmers practice - Ginger sole crops T.O. i - Ginger+ Spinach (Mixed cropping) T.O. ii - Ginger+ Spinach (Mixed cropping) + Cauliflower T.O. iii - Ginger+ Amaranths (Mixed cropping) + Cauliflower	Ginger+ Spinach (Mixed cropping) + Cauliflower	
5.	Assessment of different varieties of pea in rabi season	Farmers practice - Use of local variety (Ankur) T.O. i - Var- GS 10 T.O. ii - Var- Fresh Perl T.O. iii - Var- JK- 124	Variety JK- 124	
6.	Effect of control measures of fruit and shoot borer in brinjal in rabi season.	Farmers practice - Cypermethrin @ 1 ml/lit after appearance of infestation (Two spray) Technological option i - Flubendamide 480 SC @1 ml/ 5 lit water at 30 & 50 DAT T.O. ii - Cartap hydrochloride @ 1gm/lit at 30 & 50 DAT T.O. iii - Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	500 ha area is covered under this technology.
7.	Management of predators in kusumi lac cultivation	Farmers practice - No control measures for predators in lac cultivation Technological option i - 3 spray of Ethonfenprox 10 Ec @ 2 ml/lit at 25, 40 and 60 T.O. ii - use of nylon net (60 mesh) for covering brood lac T.O. iii - use of nylon net (60 mesh) for covering brood lac + 2 spray of Ethonfenprox 10 Ec @ 2 ml/lit at 30 and 60 DAI	use of nylon net (60 mesh) for covering brood lac + 2 spray of Ethonfenprox 10 Ec @ 2 ml/lit at 30 and 60 DAI	
8.	Performance of	Farmers practice -	Pigeon pea + turmeric	

	pigeon pea based intercropping in rainfed upland situation.	Sole pigeon pea (at 90 cm row spacing) T.O. i - Pigeon pea + turmeric (1:2) T.O. ii - Pigeon pea + ginger (1:2) T.O. iii - Pigeon pea + groundnut (1:2)	(1:2)	
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Year: 2013-14

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Nutrient management of SRI paddy in medium land condition.	Farmers practice - N 60kg + P ₂ O ₅ 25 kg+ K ₂ O 10 kg/ha T.O. i - RDF (N 80kg + P ₂ O ₅ 40 kg+ K ₂ O 20 kg/ha) T.O. ii – (N 120kg + P ₂ O ₅ 60 kg+ K ₂ O 50 kg /ha[two split] T.O. iii - (N 150kg + P ₂ O ₅ 75 kg+ K ₂ O 90 kg/ha[two split]	(N 150kg + P ₂ O ₅ 75 kg+ K ₂ O 90 kg/ha[two split]	
2.	Preservation of sun-dried mahua flower as mahua ladoo(locally called as mahua lattha).	I-Adoption of sterilization method of preservation and use of emulsifier (GMS,;glycerol mono stearate which act as antistaling agent) II- Sensory Evaluation is done by score card method	Mahua ladoo prepared by the use of sterilized sundried mahua flower, roasted maize flour and roasted groundnut flour along with GMS(0.1%) was best from shelf life, nutritive value and different parameters of sensory evaluation point of view	
3.	Preservation of surplus tomato in peak season as salty tomato chutney.	Farmer practice based salty tomato chutney T.O. i - Sweet tomato chutney (Standard method) T.O. ii - Salty tomato chutney with preservative	Shelf life of local salty tomato chutney enhanced upto 5 months with the help of concentration method of preservation and preservatives e.g. vinegar(15 ml/Kg) and sodium benzoate(0.6-0.7 gram/Kg final products).	
4.	Effect of different	Farmer's practice	Puddling through	

	puddling method in paddy cultivation.	- Puddling through Deshi plough T.O. i - Puddling through animal drawn Birsa ridger plough T.O. ii - Puddling through animal drawn puddler	animal drawn puddler is found best for paddy cultivation with highest yield of 38.7q/ha and net profit of Rs. 24,510.00/ha and B:C ratio is 1.95. Puddling index of animal drawn puddler is found 23% higher than puddling through desi plough.	
5.	Management of predators in kusumi lac cultivation.	Farmers practice - No control measures for predators in lac cultivation T.O. i - 3 spray of Ethonfenprox 10 Ec @ 2 ml/lit at 25, 40 and 60 T.O. ii - use of nylon net (60 mesh) for covering brood lac T.O. iii - use of nylon net (60 mesh) for covering brood lac + 2 spray of Ethonfenprox 10 Ec @ 2 ml/lit at 30 and 60 DAI	Ethonfenprox 10 Ec + Nylon net (60 mesh)	
6.	Effect of control measures of fruit and shoot borer in brinjal in rabi season.	Farmers practice - Cypermethrin @ 1 ml/lit after appearance of infestation (two spray) T.O. i - Flubendamide 480 SC @1 ml/ 5 lit water at 30 & 50 DAT T.O. ii - Cartap hydrochloride @ 1gm/lit at 30 & 50 DAT T.O. iii - Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT	
7.	Assessment of different varieties of pea in rabi season	Farmers practice - Use of local variety T.O. i - Var- GS 10 T.O. ii - Var- Fresh Perl T.O. iii - Var- JK- 124	Variety- JK- 124	6000 farmers adopted variety JK-124
8.	Development of	Farmers practice	Ginger+ spinach	Farmers using

	innovative intensive vegetable production model for irrigated condition in summer season.	- Ginger sole crops T.O. I - Ginger+ Spinach (Mixed cropping) T.O. ii- Ginger+ Spinach (Mixed cropping) + Cauliflower T.O. iii- Ginger+ spinach (Mixed cropping) + Cauliflower + Bitter gourd	(Mixed cropping) + Cauliflower + Bitter gourd	this technology in 400 ha area.
9.	Performance of pigeon pea based intercropping in rainfed upland situation.	Farmers practice - Sole pigeon pea (at 90 cm row spacing) T.O. i - Pigeon pea + turmeric (1:2) T.O. ii - Pigeon pea + ginger (1:2) T.O. iii - Pigeon pea + groundnut (1:2)	Pigeon pea + turmeric (1:2)	
10.	Effect of sowing method on productivity of wheat under late sown condition	Farmers practice - Broadcasting method (Broadcast the seed and making ridges for irrigation using 250-300 kg seed/ha) T.O. i - Recommended sowing method (Line sowing with recommended seed rate 150 kg/ha at 20 cm spacing) T.O. ii - SWI method (Sowing of sprouted wheat seed using specific culture at 20x20 cm spacing with 20 kg/ha seed rate – 2 seeds/ hill) T.O. iii – Modified SWI method (Sowing of sprouted wheat seed at 20x20 cm spacing with 20 kg/ha seed rate – 2 seeds/ hill)	Sowing of sprouted wheat seed using specific culture at 20x20 cm spacing with 20 kg/ha seed rate – 2 seeds/ hill	
11.	Effect of irrigation method and mulching on yield of tomato.	Farmer's practice - Furrow irrigation without mulching T.O. i - Furrow		

		irrigation + black polythene mulch T.O. ii - Raised bed and furrow irrigation + black polythene mulch		
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Year: 2014-15

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Nutrient management of SRI paddy in medium land condition.	Farmers practice - N 60kg + P ₂ O ₅ 25 kg+ K ₂ O 10 kg/ha T.O. i - RDF (N 80kg + P ₂ O ₅ 40 kg+ K ₂ O 20 kg/ha) T.O. ii – (N 120kg + P ₂ O ₅ 60 kg+ K ₂ O 50 kg /ha[two split] T.O. iii - Site Specific Nutrient Management (SSNM) treatments	(N 120kg + P ₂ O ₅ 60 kg+ K ₂ O 50 kg /ha[two split]	
2.	Nutrient management in cauliflower through organic inputs.	Farmers practice - (N 200kg + P ₂ O ₅ 84 kg+ K ₂ O 136 kg/ha) + 20 ton FYM T.O. i - 50% N through organic inputs (FYM @ 10 ton/ha + vermi compost @ 22q/ha + Karanj cake 8.2 @ q/ha) T.O. ii – 50% N through organic inputs (FYM @ 10 ton/ha + vermi compost @ 22q/ha + Karanj cake 8.2 @ q/ha) + 50% of RDF(200:100:60) through inorganic fertilizers.	50% N through organic inputs (FYM @ 10 ton/ha + vermi compost @ 22q/ha + Karanj cake 8.2 @ q/ha) + 50% of RDF(200:100:60) through inorganic fertilizers.	
3.	Evaluation of heat tolerant cauliflower varieties for summer season.	Farmers practice - Himlata T.O. i - Sungrow- 110 T.O. ii – Sungrow- 370 T.O. iii – Cemenies - Don	Variety- Sungrow- 370	
4.	Preservation of sun-dried mahua flower as mahua ladoo(locally			

	called as mahua lattha).			
5.	Use of sweet potato based nutritious and composite flour for daily consumption.			
6.	Effect of different puddling method in paddy cultivation.	Farmer's practice - Puddling through Deshi plough T.O. i - Puddling through animal drawn Birsa ridger plough T.O. ii – Puddling through animal drawn puddler	Puddling through animal drawn puddler	
7.	Control of rice stem borer <i>Scirpophagus incertulus</i> Walker and leaf folder <i>Cnaphalocrocis medinalis</i> (Guenée) in low land condition.	Farmers practice - Carbofuran 3G T.O. i - Farmers practice + use of T.chilonis @ 35 cards/ha (3 application at 7 days interval starting from 30 DAT) T.O. ii - Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ 2 spray of Fipronil 5% SC 2 ml/lit water 30 and 50 DAT T.O. iii - Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ use of T.chilonis @ 35 cards/ha (3 application at 7 days interval starting from 30 DAT)	Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ 2 spray of Fipronil 5% SC 2 ml/lit water 30 and 50 DAT	
8.	Response of weed control measures in carrot.	Farmers practice - Two Manual weeding at 20 and 35 DAS T.O. i- P.E Spraying of Oxyfluorfen (25g a.i) T.O. ii - P.E Spraying of Oxyfluorfen (50g a.i) T.O. iii - P.E Spraying of Oxyfluorfen (75g a.i)	P.E Spraying of Oxyfluorfen (50g a.i)	
9.	Evaluation of insecticide and bio-pesticide for the	Farmers practice - 3 spray of Acephate 75% SP 2g/lit water +	One spray NSKE 5% at 30 DAT + one spray of Acephate 75% SP	

	control of chilli thrips <i>Scitothrips dorsalis</i> (Hood) in chilli.	Sulphur 1g/lit water. Technological option i - 2 spray of Acetamiprid 20% SP @ 2g/lit water at 30 and 50 DAT. T.O. ii - Use of NSKE 5% at 30 and 50 DAT T.O. iii - One spray NSKE 5% at 30 DAT + one spray of Acephate 75% SP 2g/lit water	2g/lit water	
10.	Effect of sowing method on productivity of wheat under late sown condition.	Farmers practice - Broadcasting method (Broadcasting of seed and making ridges for irrigation using 250-300 kg seed/ha) T.O. i - Recommended sowing method (Line sowing with recommended seed rate 150 kg/ha at 20 cm row to row spacing) T.O. ii- SWI method (Sowing of sprouted wheat seed using specific culture at 20x20 cm spacing with 20 kg/ha seed rate (2 seeds/ hill) T.O. iii- Modified SWI method (Sowing of sprouted wheat seed at 20x20 cm spacing with 20 kg/ha seed rate (2 seeds/ hill)	(Sowing of sprouted wheat seed using specific culture at 20x20 cm spacing with 20 kg/ha seed rate – 2 seeds/ hill)	
11.	IPNI Nutrient Expert Trial on wheat	T.O. i - State recommended dose (N 80kg + P ₂ O ₅ 40 kg+ K ₂ O 20 kg/ha) T.O. ii - IPNI Nutrient expert dose		
12.	Effect of irrigation method and mulching on yield of tomato.	Farmers practice - Furrow irrigation without mulching T.O. i - Furrow irrigation + black polythene mulch T.O. ii - Raised bed and	Raised bed and furrow irrigation + black polythene mulch	2000 Farmers using mulch in vegetable production.

		furrow irrigation + black polythene mulch		
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Year: 2015-16

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Assessment of different method of fertilizer application on yield and nutrient use efficiency in paddy sown by drum seeder.	Farmers practice - Broadcasting method T.O. i - Fertilizer application by fertilizer broadcaster T.O. ii -Fertilizer application in line	Fertilizer application in line	
2.	Evaluation of heat tolerant cauliflower varieties for summer season.	Farmers practice - Himlata T.O. i - Sungrow- 110 T.O. ii – Sungrow- 370 T.O. iii – Cemenies – Don	Sungrow- 370	600 ha area covered under variety Sungrow- 370
3.	Control of rice stem borer <i>Scirpophagus incertulus</i> Walker and leaf folder <i>Cnaphalocrocis medinalis</i> (Guenée) in low land condition.	Farmers practice -Carbofuran 3G T.O. i - Farmers practice + use of T.chilonis @ 5 cards/ha (3 application at 7 days interval starting from 30 DAT) T.O. ii - Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ 2 spray of Fipronil 5% SC 2 ml/lit water 30 and 50 DAT T.O. iii - Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ use of T.chilonis @ 5 cards/ha (3 application at 7 days	Nursery management, use of carbofuran 3G 30kg/ha 5 DBT+ 2 spray of Fipronil 5% SC 2 ml/lit water 30 and 50 DAT	

		interval starting from 30 DAT)		
4.	Impact of tillage on yield of wheat in late sown condition.	Farmers practice - Broadcasting method Broadcasting of seed after land preparation (3 tillage) T.O. i - Sowing of wheat through minimum tillage(1 tillage) T.O. ii – Sowing of wheat through zero tillage implement (No tillage)	Sowing of wheat through zero tillage implement (No tillage)	Technology transferred to farmers in 50 ha area
5.	Response of weed control measures in carrot.	Farmers practice - Two Manual weeding at 20 and 35 DAS T.O. i- P.E Spraying of Oxyfluorfen (25g a.i) T.O. ii - P.E Spraying of Oxyfluorfen (50g a.i) T.O. iii - P.E Spraying of Oxyfluorfen (75g a.i)	P.E Spraying of Oxyfluorfen (50g a.i)	
6.	Use of sweet potato based nutritious and composite flour for daily consumption.	Farmer practice- direct consumption just after boiling T.O. i – Formula-I: Sweet potato based nutritious & composite flour having composition as- sweet potato flour=66%, Bengal gram dal flour (besan)=20%, Wheat flour=8%, refined oil = 6% T.O. ii Formula-I I: Sweet potato based nutritious & composite	Sweet potato based nutritious & composite flour having composition as- sweet potato flour=50%, Bengal gram dal flour (besan)=20%, Wheat flour=24%, refined oil = 6%	

		flour having composition as- sweet potato flour=50%, Bengal gram dal flour (besan)=20%, Wheat flour=24%, refined oil = 6%		
7.	Effect of nutrient management of pond on fish production.	Farmers practice - stocking of fish with minimum manuring (200kg raw cattle dung kg/ha/yr (rate of stockings= no. of fry/acre=10,000) T.O. i - stocking of fish with minimum manuring and lime application [@ of lime=250kg/ha/yr) start from pond treatment upto to the harvest] . T.O. ii - stocking of fish with minimum manuring and lime application [@ of lime=250kg/ha/yr) along with use of poultry litter (5 quintal/ha/yr) start from pond treatment upto to the harvest].	stocking of fish with minimum manuring and lime application[@ of lime=250kg/ha/yr) along with use of poultry litter (5 quintal/ha/yr) start from pond treatment upto to the harvest].	
8.	Effect of nutrient management of productivity of sweet	Farmers Practice - 35-40 kg N, 16-20 kg P ² O ⁵ for maize cultivation.	125% of RDF (150:75:60).	Dissemination of this technology to farmer in 50 ha area.

	corn.	T.O. i - 75% of RDF (100:50:33). T.O. ii - 100% RDF dose for maize (120:60:40). T.O. iii - 125% of RDF (150:75:60).		
9.	Integrated weed management in kharif maize.	Farmers Practice – Two interculturing (Weeding) operation at 20 & 40 DAS. T.O. i - P.E of Atrazin 500 gm a.i + one inter cultivation at 40 DAS. T.O. ii – P.E of Pendimethalin 30 EC @ 750 gm a.i) + one inter cultivation at 40 DAS. T.O. iii - PE of tank mixed of (Atrazin 50% wp @ 500gm + Pendimethalin 30 EC @ 750 gm a.e)	PE of tank mixed of (Atrazin 50% wp @ 500gm + Pendimethalin 30 EC @ 750 gm a.e)	
10.	Evaluation of insecticide and bio-pesticide for the control of chilli thrips <i>Scitothrips dorsalis</i> (Hood) in chilli.	Farmers practice - 3 spray of Acephate 75% SP 2g/lit water + Sulphur 1g/lit water. T.O. i - 2 spray of Acetamiprid 20% SP @ 2g/lit water at 30 and 50 DAT. T.O. ii - Use of NSKE	One spray NSKE 5% at 30 DAT + one spray of Acephate 75% SP 2g/lit water found to be most effective for control of chilli thrips as average number of insects reduces from 2.11 to 1.35 at 30 DAT. In this treatment highest yield of 87.4q/ha, net return Rs. 288860/ha and B:C ratio 5.8 were observed.	100 ha area covered under this technology

		5% at 30 and 50 DAT T.O. iii - One spray NSKE 5% at 30 DAT + one spray of Acephate 75% SP 2g/lit water		
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Year: 2016-17

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Assessment of different method of fertilizer application on yield and nutrient use efficiency in paddy sown by drum seeder.	Farmers practice – Broadcasting method T.O. i - Fertilizer application by fertilizer broadcaster T.O. ii –Fertilizer application in line	Fertilizer application in line	Dissemination of this technology to farmer in 60 ha area.
2.	Impact of tillage on yield of wheat in late sown condition.	Farmers practice - Broadcasting method Broadcasting of seed after land preparation (3-4 tillage) T.O. i - Sowing of wheat through minimum tillage (1 tillage) T.O. ii – Sowing of wheat through zero tillage implement (No tillage)	Wheat sowing through zero tillage implement (No tillage)	
3.	Performance of YVM resistant varieties of ladysfinger under kharif season	Farmers practice - Mahico-10 T.O. i- 7315(JK) T.O. ii - Shakti (Nunhems) T.O. iii- 1001 (NS)	Variety 1001 (NS) should be used for higher yield and low infestation of YVM.	
4.	Effect of nutrient management of pond on fish production.	Farmers practice - stocking of fish with minimum manuring (200kg raw cattle dung kg/ha/yr (rate of stockings= no. of fry/acre=10,000) T.O. i - stocking of fish with minimum manuring and lime application [@ of lime=250kg/ha/yr)	stocking of fish with minimum manuring and lime application [@ of lime=250kg/ha/yr) along with the use of poultry litter (5 quintal/ha/yr) manuring start from pond treatment upto to the harvest].	60 farmers are using integrated fish farming system in the district.

		manuring start from pond treatment upto to the harvest] . T.O. ii - stocking of fish with minimum manuring and lime application [@ of lime=250kg/ha/yr) along with the use of poultry litter (5 quintal/ha/yr) manuring start from pond treatment upto to the harvest].		
5.	Effect of nutrient management of productivity of sweet corn.	Farmers Practice - 35-40 kg N, 16-20 kg P ² O ⁵ for maize cultivation. T.O. i - 75% of RDF (100:50:33). T.O. ii - 100% RDF dose for maize (120:60:40). T.O. iii - 125% of RDF (150:75:60).	100% RDF dose for maize (120:60:40).	Farmers cultivating Sweet corn in 100 ha area through this technology.
6.	Evaluation of insecticide for the control of shoot & fruit borer in Okra	Farmers practice – 4-5 spray of Metasystox @ 3-4 ml/lit water at weekly interval at fruiting stage. T.O. i - Seed treatment with Thiamethoxame 3g/kg seed + BT 1ml/lit water 55 DAS. T.O. ii – Seed treatment with Thiamethoxame 3g/kg seed +NSKE 4% 5ml/lit water at 35 DAS. T.O. iii - 2 spray of NSKE 4% 5ml/lit water at 30 and 40 DAS + Emamectin benzoate @ 0.5 ml/ lit water at 55 DAS.	Seed treatment with Thiamethoxame 3g/kg seed +NSKE 4% 5ml/lit water at 35 DAS found to most effective for control of fruit & shoot borer in Okra. Percentage of shoot & fruit (Nos. & wt.) Infestation is 5.26% & 15.85% and 23.44 % is less in this treatment. In this treatment highest yield is 85.22q/ha, net return Rs. 141050/ha and B:C ratio 1.9 were observed.	
7.	Assessment of efficiency of different fish feed developed from locally available resources.	Farmer's practice - Minimum use of rice bran. T.O. i – Use of locally made fish feed (rice bran : mustard cake in	Use of locally made fish feed (rice bran : mustard cake in 1:1 ratio as per age fish) + 1% mineral mixture	50 farmers adopted this technology

		1:1 ratio as per age fish) T.O. ii- Use of locally made fish feed (rice bran : mustard cake in 1:1 ratio as per age fish) + 1% mineral mixture		
8.	Control of damping off disease in tomato crop	Farmers practice – 1 – 1.5 kg FYM/m ² + fungicide after disease appearance Mancozeb @ 3-4 g/lit water T.O. i - Soil solarization of seed bed (150-200 micron polythene) + karanj cake @ 400g/m ² T.O. ii – Soil solarization + soil treatment with Trichoderma viridi @ 3.0 g/m ² . T.O. iii - Soil treatment with trichoderma viridi @3.0 g/m ² + seed treatment with Trichoderma viridi @4g/100g seed.	Soil treatment with trichoderma viridi @3.0 g/m ² + seed treatment with Trichoderma viridi @4g/100g seed. May be effective in managing damping off disease in tomato. In this treatment the yield is 156.24q/ha, net return is Rs. 397320, B:C ratio is 5.5	
9.	Assessment of improved backyard composting methods.	Farmers practice – Dumping of cow dung and household/field wastes in pits (size unspefied) T.O. i – Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet of pit of 2mx1m size. T.O. ii – Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet + PSB, Azatobactor and Trichoderma @ one packet each per pit of	Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet + PSB, Azatobactor and Trichoderma @ one packet each per pit of 2mx1m size.	

		2mx1m size.		
10.	Assessment of Hybrid Rice varieties under medium land condition	Farmers practice - PAC801 / Arize 6444 (135-140 days) T.O. i – JK 2020 (110 days) T.O. ii – Rashi 113 (110 days). T.O. iii – Arize Tez (110-115 days). T.O. iv – DRH-2 (115 – 120 days)	Variety- Arize Tez Gold	

Year: 2017-18

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Assessment of Hybrid Rice varieties under medium land condition	Farmers practice - Arize 6444 (135-140 days) T.O. i – JK 2020 (110 days) T.O. ii – Rashi 113 (110 days). T.O. iii – Arize Tez (110-115 days). T.O. iv – DRH-2 (115 – 120 days)	- Arize Tez Gold	More than 1000 ha area covered under variety Arize Tez Gold
2.	Assessment of locally developed fish feed efficiency on fish growth.	Farmer's practice - Minimum use of rice brokens. T.O. i – Use of rice brokens & mustard oil cake in 1:1 ratio as per age of fish. T.O. ii - Use rice brokens & mustard oil cake in 1:1 ratio as per age of fish + mineral mixture (1% of total feed).	Use rice brokens & mustard oil cake in 1:1 ratio as per age of fish + mineral mixture (1% of total feed).	
3.	Impact assessment of three different traditional parboiling methods with respect to rice quality.	Farmer's practice - Use of local parboiling method of paddy grains (Soaking for 1 or 2 days in normal water, open steaming, sundrying, milling) T.O. i – Use of tempering based traditional parboiling method of paddy grains. (Soaking in hot water at 90 ⁰ c for 1 hour,		

		Tempering for 4 hours, open steaming, sundrying, milling) T.O. ii- Used of tempering based traditional parboiling method of paddy grains. (Soaking in hot water at 90⁰c for 1 hour, tempering for 2 hours, steaming, sundrying, milling)		
4.	Performance of YVM resistant varieties of ladysfinger under kharif season	Farmers practice - Mahico-10 Technological option i- 7315(JK) Technological option ii - Shakti (Nunhems) Technological option iii - 1001 (NS)	Variety 1001 (NS) should be used for higher yield and low infestation of YVM.	Farmers using this variety 1001 (NS) of ladysfinger in 100 ha
5.	Evaluation of insecticide for the control of shoot & fruit borer in Okra	Farmers practice – 4-5 spray of Metasystox @ 3-4 ml/lit water at weekly interval at fruiting stage. T.O. i - Seed treatment with Thiamethoxame 3g/kg seed + BT 1ml/lit water 55 DAS. T.O. ii – Seed treatment with Thiamethoxame 3g/kg seed +NSKE 4% 5ml/lit water at 35 DAS. T.O. iii - 2 spray of NSKE 4% 5ml/lit water at 30 and 40 DAS + Emamectin benzoate @ 0.5 ml/ lit water at 55 DAS	Seed treatment with Thiamethoxame 3g/kg seed +NSKE 4% 5ml/lit water at 35 DAS found to most effective for control of fruit & shoot borer in Okra. Percentage of shoot & fruit (Nos. & wt.) Infestation is 6.02% & 18.65% and 26.45% is less in this treatment. In this treatment highest yield is 86.87q/ha, net return Rs. 119114/ha and B:C ratio 1.6 were observed.	
6.	Control of damping off disease in tomato crop	Farmers practice – 1 – 1.5 kg FYM/m² + fungicide after disease appearance Mancozeb @ 3-4 g/lit water T.O. i - Soil solarization of seed bed (150-200 micron polythene) + karanj cake @ 400g/m² T.O. ii – Soil solarization + soil treatment with	Soil treatment with trichoderma viridi @3.0 g/m ² + seed treatment with Trichoderma viridi @4g/100g seed. May be effective in managing damping off disease in tomato. In this treatment the yield is 157.42q/ha, net return is Rs 400860., B:C ratio is 5.6	150 farmers adopted this technology

		Trichoderma viridi @ 3.0 g/m ² . T.O. iii - Soil treatment with trichoderma viridi @3.0 g/m ² + seed treatment with Trichoderma viridi @4g/100g seed		
7.	Assessment of improved backyard composting methods	Farmers practice – Dumping of cow dung and household/field wastes in pits (size unspecified) T.O. i – Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet of pit of 2mx1m size. T.O. ii – Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet + PSB, Azatobactor and Trichoderma @ one packet each per pit of 2mx1m size.	Dumping of cow dung and household/field wastes mixing with DAP @ 500g/m ² after filling every feet + PSB, Azatobactor and Trichoderma @ one packet each per pit of 2mx1m size.	250 farmers adopted this technology
8.	Effect of different dose and application method of phosphorus on yield of zero tilled wheat	Farmers practice - Fertilizer application through broadcasting method (RDF of NPK , 80:60:20) T.O. i- RDF of (NPK, 80:60:20) Phosphorus applied as DAP through zero tillage machine) + N & K applied by broadcasting. T.O. ii - NPK (80:50:20) Phosphorus applied as DAP through zero tillage machine) + N & K applied by broadcasting. T.O. iii - NPK (80:40:20) Phosphorus applied as DAP through zero tillage machine) + N & K applied by broadcasting	Zero tilled wheat cultivation with recommended dose of fertilizer 80:60:20 (phosphorus applied through zero tillage) is recommended for getting higher yield and net return per ha.	
9.	Effect of mulching on water use efficiency and yield of drip irrigated bitter gourd in summer	Farmers practice - Without mulching T.O. I - Mulch with black colour polythene. T.O. ii - Mulch with silver colour polythene	Silver mulching is recommended in drip irrigated summer bitter gourd cultivation due to 25% high yield and net return compare to	

			without mulch drip irrigated summer bitter gourd cultivation	
10.	Evaluation of onion variety.	Farmers practice - Nasik-53 (Mahalaxmi) T.O. i - Prema (East West) T.O. ii –TopaZ (Rasi)	Topaz variety of onion performed over Nasik - 53 and Prema. Highest yield obtained in Topaz followed by Prema. So. Variety Topaz is recommended for micro level situation	

Year: 2018-19

Sl No.	Title	Technology	Relevance	Status of transfer
1.	Assessment of different pretreatments of drying with respect to quality of dried peas.	Farmer's practice - Direct sale of whole peas after keeping for home consumption. T.O. i – Sulphiting in 0.5% KMS solution for 10 minute then steam blanching for 3-4 minutes and sun drying. T.O. ii - Blanching for 2-3 minutes in water containing 0.5% KMS, 0.1% sodium bicarbonate and 0.1% magnesium oxide and then sun drying.	Blanching for 2-3 minutes in water containing 0.5% KMS, 0.1% sodium bicarbonate and 0.1% magnesium oxide and then sun drying.	
2.	Impact assessment of three different traditional parboiling methods with respect to rice quality.	Farmer's practice - Use of local parboiling method of paddy grains (Soaking for 1 or 2 days in normal water, open steaming, sundrying, milling) T.O. i – Use of tempering based traditional parboiling method of paddy grains. (Soaking in hot water at 90 ⁰ c for 1 hour, Tempering for 4 hours, open steaming, sundrying, milling) T.O. ii - Used of tempering based traditional parboiling	Use of tempering based parboiling method of paddy grains. (Soaking in hot water at 90 ⁰ c for 1 hour, Tempering, , steaming, sundrying, milling)	

		method of paddy grains. (Soaking in hot water at 90 ⁰ c for 1 hour, tempering for 2 hours, steaming, sundrying, milling)		
3.	Effect of mulching on water use efficiency and yield of drip irrigated bitter gourd in summer.	Farmers practice - Without mulching T.O. i- Mulch with black colour polythene. T.O. ii - Mulch with silver colour polythene.	Mulch with silver colour polythene.	
4.	Mango based intercropping in newly established orchard in kharif season.	Farmers practice – Mango sole T.O. i- Mango + Horse gram (1:10) T.O. ii – Mango + Black gram (1:10) T.O. iii – Mango + Green gram (1:10)	Mango + Green gram (1:10)	
5.	Management of late blight of potato in rabi season.	Farmers practice - Foliar spray of Mancozeb 75% @ 2g/lit. water after initiation of symptom. T.O. I - 3 Spray of Carbendazim + Mancozeb @ 2g/lit. Water at 10 days interval right from 30 th day of planting. T.O. ii – 2 spray of Metalaxyl 81% + Mancozeb 72% wp @ 2g/lit. Water at 15 days interval from 30 th day of planting.	2 spray of Metalaxyl 81% + Mancozeb 72% wp @ 2g/lit. Water at 15 days interval from 30 th day of planting.	
6.	Assessment of different sowing method on wheat yield.	Farmers practice – Conventional method (wheat sowing behind the plough). T.O. i- Sowing with conventional seed drill. T.O. ii – Sowing with Zero tillage machine.	Zero tillage machine is suitable for high yield and high profit.	
7.	Enhancing productivity by suitable intercropping system in uplands.	Farmers practice - Pigeon pea (Sole) 60 cm T.O. i- Pigeon pea + Maize (1:1) T.O. ii – Pigeon pea + Lady's finger (1:1)	Pigeonpea + Lady's finger (1:1)	

		T.O. iii – Pigeon pea + Soybean (1:1) Crop Variety: Pigeonpea- NDA-2, Lady Finger- Rohini, Maize Kanchan, Soybean- JS-335		
8.	Effect of nutrient management on productivity of onion.	Farmers practice - 40 kg N+ 20 kg P ₂ O ₅ T.O. i- Farmers practice + 50% recommended dose of K (30 kg K ₂ O/ha) T.O. ii – 100% RDF (100:60:60 kg NPK/ha) + 20 kg Sulphur/ha	100% RDF (100:60:60 kg NPK/ha) + 20 kg Sulphur/ha	
9.	Management of pod borer in pigeon pea in kharif season.	Farmers practice - Use of Chlorpyrifos 20 EC 1.5ml/lit. as per appearance of larva. T.O. i- 2 spray of Indoxacarb 15.8% EC @ 0.5 ml/lit. water 1 st spray at 50% flowering and 2 nd spray at 15-20 days after 1 st spraying. T.O. ii- – 2 spray of Chlorantraniliprole 18.5% SC 1ml/3lit. water + Bt var. kurstaki 2g/lit. water. 1 st spray at 50% flowering and 2 nd spray at 15-20 days after 1 st spraying. T.O. iii- –2 spray of Indoxacarb 15.8% EC @ 0.5 ml/lit. water + NSKE 5%. 1 st spray at 50% flowering and 2 nd spray at 15-20 days after 1 st spraying.	2 spray of Indoxacarb 15.8% EC @ 0.5 ml/lit. water + NSKE 5%. 1 st spray at 50% flowering and 2 nd spray at 15-20 days after 1 st spraying.	
10.	Evaluation of onion variety kharif season	Farmers practice - Nasik-53 (Mahalaxmi) T.O. I - Prema (East West) T.O. ii - TopaZ (Rasi)	Variety- Prema	

18. DETAILS OF TRAINING PROGRAMMES CONDUCTED

I. Training programmes conducted for farmers / farm women (last 8 years)

Discipline	I (2011-12)			II (2012-13)			III (2013-14)			IV (2014-15)			V (2015-16)			VI (2016-17)			VII (2017-18)			VIII (2018-19)			TOTAL		
	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P
Crop Production	18	16	423	12	19	557	14	13	393	16	16	472	16	16	468	16	13	357	17	18	477	18	7	258	127	118	34
Horticulture	17	18	485	14	15	471	13	16	500	15	15	480	14	15	473	14	15	454	18	18	512	17	11	400	122	123	37
Soil Science	19	26	636	17	13	351	17	12	397	17	14	426	17	8	248	14	9	312	16	9	270	14	4	139	131	95	27
Home Science	2	2	30	2	9	250	12	13	348	16	10	270	16	13	428	18	16	483	17	15	415	12	7	221	95	85	24
Agril Engg	15	10	286	13	6	194	13	12	351	14	15	430	14	15	449	14	11	330	15	15	424	15	9	314	113	93	27
Plant Protection	18	13	405	17	12	333	14	15	448	14	14	389	15	14	424	15	14	472	15	13	510	17	9	329	125	104	33
Livestock	2	2	61	5	3	70	9	3	71	5	1	23	5	1	23	5	1	26							31	11	2
Fisheries																						1	1	32	1	1	3
Total	91	87	2326	80	77	2226	92	84	2508	97	85	2490	97	82	2513	96	79	2434	98	88	2608	94	48	1693	745	630	18

II. Training programme conducted vs targets fixed (discipline-wise) for extension functionaries (last 8 years)

S · N	Discipline	I (2011-12)			II (2012-13)			III (2013-14)			IV (2014-15)			V (2015-16)			VI (2016-17)			VII (2017-18)			VIII (2018-19)			TOTAL		
		T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P
1.	Crop Production	3	5	11 1	4	4	97	3	2	74	2	2	52	2	2	52	1	4	10 0	2	5	12 7	2	2	72	1 9	2 6	685
2.	Horticul ture							2	1	32	2	2	60	2	3	87	1	4	11 4	1	1	25	2	2	58	1 0	1 3	376
3.	Soil Science	1	1	27	3	3	93	1	1	39	2	3	75	1	3	75	1	1	29	1	1	24				1 0	1 3	362
4.	Home																											

	Science																											
5.	Agril Engg	1	3	80				2	1	34	1	1	26		1	26		1	34	2	3	80	2	2	78	8	1 2	358
6	Plant Protection	1			2	2	53	1			1	1	27				1	1	39	1	1	22	1					
	Total																											
		6	9	21 8	9	9	24 3	9	5	17 9	8	9	24 0	5	9	24 0	4	1 1	31 6	7	1 1	27 8	7	6	20 8	4 7	6 4	178 1

III. Training programmes conducted for rural youths (last 8 years)

S · N	Discipline	I (2011-12)			II (2012-13)			III (2013-14)			IV (2014-15)			V (2015-16)			VI (2016-17)			VII (2017-18)			VIII (2018-19)			TOTAL		
		T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P	T	C	P
1	Crop Production	3	1	25	3	3	72	2	1	21	3	2	47	2	4	88	3	1	81				4	3	10	2	3	117
2	Horticulture	3	1	15	3	2	52	3	4	10	3	3	64		3	64	3	3	85	1			2	1	25	1	1	406
3	Soil Science	1	1	24		1	30	1	2	53	1			2				1	25	4			1					
4	Home Science							4	2	58	2	4	10	5	3	77	3	1	24				2	1	38	1	1	300
5	Agril Engg	1	1	25	1	1	26							1	1	26				1			1	2	81	4	5	158
6	Plant Protection	1	1	25	1	1	24	2	1	30	2						1	1	30	2			2	1	43	1	5	152
7	Livestock	1	1	18																						1	1	18
	Total	1	6	13	8	8	20	1	1	26	1	9	21	1	1	25	1	2	97	8			1	8	29	7	7	220

19. Frontline Demonstration Programme

Front-line demonstration in *rabi* season

Condition: Rainfed/Irrigated

Year wise	Crops	No. of farmer	Area (ha)	Avg. yield (q/ha)	Local check			Improved Variety			Increase		Net loss (Rs.)	Effective gain (Rs.)
					Av. Yield	C (Rs.)	R (Rs.)	Variety	C (Rs.)	R (Rs.)	C (Rs.)	R (Rs.)		
I (2011-12)	Mustard	39	10.0	9.2	6.5	6800	16250	P.Mahak	8200	23000		6750		5350
		10	5	6.5	6.5	6800	16250	NPJ-113	8200	21250		5000		3600
		17	5	10.2	6.5	6800	16250	Pusa Agrani	8200	25500		9250		7850
		21	5	11.1	6.5	6800	16250	NRCHB	8200	27750		11500		10100

		16	5	11.7	6.5	6800	16250	-101 NRCDR -2	8200	29250		13000		11600
II (2012-13)														
III (2013-14)														
IV (2014-15)	Mustard	42	10	9.5	7.0	7000	21000	Pusa Mahak	8500	28500	1500	7500	-	6000
	Pea	05	0.5	122	78	-	-	JK-124	32000	19520 0				
	Tomato	18	02	400	250	-	-	Laxmi	55000	28000 0				

Front-line demonstration in *rabi* season

Condition: Rainfed/Irrigated

Year wise	Crops	No. of farmer	Area (ha)	Avg. yield (q/ha)	Local check			Improved Variety			Increase		Net loss (Rs.)	Effective gain (Rs.)
					Av. Yield	C (Rs.)	R (Rs.)	Variety	C (Rs.)	R (Rs.)	C (Rs.)	R (Rs.)		
V (2015-16)	Chickpea	124	20	12.2	8.5	16800	34000	Jaki-9218	18500	48800	1700	14800	-	13100
	Musatar	90	10	8.2	6.5	7500	22750	Pusa Mahak	9800	28700	2300	5950	-	3650
	Linseed	75	15	4.8	2.8	5600	8400	Sharda	7400	14400	1800	6000	-	4200
VI (2016-17)	Chickpea	76	20	11.2	7.8	17800	46800	P-372	19500	67200	1700	20400	-	18700
	Fieldpea	82	20	13.5	8.6	15000	34400	Prakash	16500	54000	1500	19600	-	18100
	Mustard	84	30	9.6	6.5	9800	26000	NRCHB-101	12500	38400	2700	12400	-	9700
	Linseed	74	20	6.2	4.0	8200	16000		9500	24800	1300	8800	-	7500
VII (2017-18)	Chickpea	63	15	10.4	8.5	17500	54910	P-256	19500	67200	1700	12290	-	10590
	Fieldpea	50	10	11.2	8.6	15000	41450	Aman	16500	54000	1500	12550	-	11050
	Greengram	49	10					IPM 2-3						
	Mustard	89	40	8.2	4.5	9800	21150	P-30	12500	38400	2700	17250	-	14550
	Linseed	44	20	5.2	4.0	8200	17200	Garima	9500	22360	1300	5160	-	3860
VIII (2018-19)	Chickpea	50	20	12.8	9.2	19000	36800	Jaki-9218	22000	57600	3000	20800	-	17800
	Greengram	55	20					HUM-						

	ram (Summ er)							16						
	Mustard	80	30	8.6	6.0	11000	27500	P-26	14500	41000	3500	13500	-	10000
	Linseed	33	10	5.6	3.8	9000	15200	Shekhar	11000	22400	2000	7200	-	5200

Front-line demonstration in *kharif* season

Condition: Rainfed/Irrigated

Year wise	Crops	No. of farmer	Area (ha)	Avg. yield (q/ha)	Local check			Improved Variety			Increase		Net loss (Rs.)	Effectiv e gain (Rs.)
					Av. Yield	C (Rs.)	R (Rs.)	Variety	C (Rs.)	R (Rs.)	C (Rs.)	R (Rs.)		
I (2011-12)	Pigeon pea	18	4.0											
II (2012-13)	Pigeon pea	8	2.0	13.6	8.2	9500	24600	ND-1	10700	40800	1200	16200	-	15000
	Ground nut	15	2.0	13.2	10.8	20200	54000	TG-22	21500	68000	1300	14000	-	12700

	Niger	21	5.0	2.8	1.7	5150	6800	Puja	6500	11200	1350	4400	-	3050
	Rice	28	10	30.5	22.2	18500	27750	Abhish ek	20000	38125	1500	10375	-	8875
III (2013- 14)	Groun dnut	16	3.0	14.1	9.8	21000	39200	TG-22	22500	56400	1500	17200	-	15700
	Pigeon pea	10	3.0	11.5	7.8	10000	39000	ND-1	11200	57500	1200	18500	-	17300
	Brinjal	20	1	310	180	32000	12600	Swarn Shakti	42000	21700 0	1000 0	91000	-	81000
	Sweet Potato	15	5	156	98	15000	58800	-	17000	93600	2000	34800	-	32800
	Rice	38	15	32.5	25	19000	36000	Sahbha gi Dhan	21000	46250	2000	10250	-	8250
IV (2014- 15)	Pigeon pea	10	2	10.5	6.8	10500	27200	Pusa Arhar- 192	13500	42000	3000	14800	-	11800
	Groun dnut	12	2	13.5	8.5	21500	42500	TG-22	23800	67500				
	Soybean	5	1	11.2				Birsa Soybea n-1	14000	28000				
	Rice	18	5	33.5	26.0	19500	33800	Sahbha gi Dhan	21500	43550	2000	9750	-	7750
	Rice	22	5	52	40	-	-	Arize- 6444	25000	67600				
	Sweet Potato	12	5	162	100	15000	70000	-	19000	11340 0	4000	4340	-	39400
	Maize	18	2	40.5	25	-	-	PHEM -1	21000	40500				

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Front-line demonstration in *kharif* season

Condition: Rainfed/Irrigated

* Year wise	Crops	No. of farmer	Area (ha)	Avg. yield (q/ha)	Local check			Improved Variety			Increase		Net loss (Rs.)	Effective gain (Rs.)
					Av. Yield	C (Rs.)	R (Rs.)	Variety	C (Rs.)	R (Rs.)	C (Rs.)	R (Rs.)		
V (2015-16)	Rice	65	10	27.3	22	21500	30800	Sahbhagi Dhan	23500	38200	2000	7400	-	5400
	Wheat	8	2	27.6	25.5	27500	51120	K-9107	23300	55200	4200	4080		
	Bitter gourd	30	5	328	275	31200	192500	Pali	35200	229600				
	Maize	10	1						75000	312000				
	Tomato	16	1	370	255			Nandini	60000	296000				
VI (2016-17)	Pigeon pea	76	30	12.8	8.0	12000	40000	NDA-2	15500	64000	3500	24000	-	20500
	Greengram	19	10	9.2	6.0	15700	30000	HUM-16	17200	46000	1500	16000	-	14500
		27	10	8.5	6.0	15700	30000	Pant M-5	17200	42500	1500	12500	-	12500
	Horsegram	68	20	6.7	4.2	11300	21000	Payur-2	13500	33500	1700	12500	-	10800
	Groundnut	64	30	14.2	9.5	16000	38000	TG-38	18000	56800	2000	18800	-	16800
	Sesame	44	20	4.3	2.2	7300	17600	RT-351	8800	34400	1500	16800	-	15300
	Niger	54	20	4.4	2.7	7800	13500	JNC-6	9200	22000	1400	8500	-	71000

VII (2017-18)	Pigeon pea	48	10	10.8	7.5	12000	41250	NDA-2	15500	59400	3500	18150	-	14650
	Greengram	73	10	9.8	6.2	15700	37200	IPM-2-3	17500	58800	1800	21600	-	19800
	Horsegram	45	10	7.8	4.5	11800	22500	Birsa Kulthi-1	13500	39000	1700	16500	-	14800
	Blackgram	50	20	10.6	6.5	16000	39000	Azad-3	17500	63000	1500	24000	-	22500
	Groundnut	83	30	15.5	10.2	16000	51000	TG-37	19000	78000	3000	27000	-	24000
	Sesame	32	20	5.4	3.2	7800	25600	GT-3	9500	44000	17000	18400	-	16700
	Niger	38	20	5.7	3.4	7800	17000	BN-1	9200	26000	1400	9000	-	7600
VIII (2018-19)	Groundnut	85	20	13.6	10.5	19500	52500	K-6	23500	68000	4000	15500	-	11500
	Sesame	29	10	5.8	3.2	10500	25200	GT-9	13000	43400	2500	18200	-	15700
	Niger	25	10	6.2	3.4	9000	17000	BN-1	11000	29000	2000	12000	-	10000
	Pigeon pea	99	20	11.5	7.8	13000	31200	NDA-2	19000	46000	7000	14800	-	10800
	Greengram	50	10	10.7	6.4	15700	38400	IPM-2-3	18800	64200	3100	25600	-	22500
	Horsegram	50	20	8.2	4.8	11800	24000	Birsa Kulthi-1	14500	41000	2700	17000	-	14300
	Blackgram	36	10	9.5	6.5	16000	37200	Sulata	18800	57000	2800	19800	-	17000

Front-line demonstration on Enterprise in year round

Year wise	Animal/ bird	Breed	No. of Raisers	Total no of animals/ birds	Avg. Prodn.	Local check			Improved breed / tech.		Increase		Net loss (Rs.)	Effet. Gain (Rs)
						Av. Prodn.	C	R	C	R	C	R		
I (2011-12)														
II (2012-13)														
III (2013-14)														
IV (2014-15)														
V (2015-16)														
VI (2016-17)														
VII (2017-18)														

VIII (2018-19)														

(Pl add row if required)

20. Critical input supplied during the period under review:

a) Agri-inputs (in q)

Inputs	Variety	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
i) Seed - Crop-wise & \ variety-wise										
Rice	MTU-7029	70.0	30		30.0	25.0	45.0			
	Lalat	60.0	20		30.0	25.0	50.0	45.0	48.0	
	Abhishek	25.0								
	Birasmati	-	3.0							
	Sahbhagi		20.0		15.0	6.0	25.0	25.0	11.0	
	R. Mansuri							35.0	42.0	
Pigeonpea	Birsa Arhar-1	2.0	0.6		0.5					
	ND-1	-	0.4							
	TJT-501								1.6	
	ND-2						2.0			
Blackgram	WBU-109								0.7	
Niger	Puja	0.5	0.15					0.5		
	BN-1							0.5		
Mustard	Shivani	1.0								
	P-30						1.0			
	P-26								5.20	
Toria			0.25							
Turmeric	Rajendra Sonia	4.0	4.0							
Dhaincha	Asam Local							1.0	1.5	
ii) Biofertiliser										
iii) Any other										

b) Horti-inputs

Inputs	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
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i) Seed									
ii) Saplings					12000	3275	2830	22300	
iii) Root / tubers									
iv) Any other									

c) Livestock/ Poultry/ Fishery -inputs

Inputs	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
Type-wise									

21. Soil Testing and Soil Health Cards Issued

Inputs	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
Soil Samples tested							250	1387	
Soil Health Card issued							250	1387	
No of Farmers benefitted							250	1387	

22. Entrepreneur development during the period of QRT:

- a) Area/Field:
- b) Target group:
- c) Impact:

23. Capacity building of KVK Staff / Trainers:

- a. Number of staff trained:
- b. Area of training:
- c. Utilization of updated knowledge:
- d. Number of Workshops / Seminars attended:

24. Linkage establishment with other Govt. Department / NGOs

Establishment	Area of collaboration / interaction
i) ZRS Dumka, ZRS Darisai, ZRS	Participation in meeting, Transfer to technology

Chiyanki	
DMR (ICAR) New Delhi	conducting training programmes and demonstration
DRMR (ICAR) Bharatpur, Rajasthan	Conducting training programmes and demonstration
IINRG, Namkum, Ranchi	Participation in meeting, conducting training programme & demonstration programme
HARP, Plandu Ranchi	Participation in meeting, conducting training programme & demonstration programme
KVKs of Other district	Participation in meeting
District Agriculture Office, Bokaro	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
District Horticulture Office, Bokaro	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
ATMA Bokaro	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
District Soil Survey & Soil Conservation Office, Bokaro	Joint implementation, participation in meeting, conducting training programme & demonstration programme
Line Dept. State Govt.	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
NABARD/COMMERCIAL BANK	Participation in meeting, conducting training programme
LDM, Bokaro	Participation in meeting, conducting training programme
R.K. Mission Ranchi	Participation in meeting, conducting training programme & demonstration programme
CURRS, Hazaribagh	Participation in meeting, conducting training programme & demonstration programme
JSLPS, Sanjivini Project, Bokaro	Participation in meeting, conducting training programme & demonstration programme
NGO (Pradan, Support, Raj Development SHADOW,	Joint diagnostic survey, participation in meeting, conducting training programme & demonstration

Sanjeevni etc)	programme
Agriculture Skill Council of India, New Delhi	Skill Development Training
IIPR, Kanpur	Implementation of Seed Hub Programme
Regional Centre of Organic Farming, Patna	Training programme and Monitoring of KKA programme
District Forest Office, Bokaro	Training

(Pl add row if required)

25. Revolving Fund Status (Rs. in lakh):

Activity	I (2011- 12)	II (2012- 13)	III (2013- 14)	IV (2014- 15)	V (2015- 16)	VI (2016- 17)	VII (2017- 18)	VIII (2018- 19)	Total
i) Seed Production, Institutional Charge, Lodging & Bank Interest	4.5346	2.07749	1.02735	2.70777	1.96945	1.75515	2.68870	3.62195	20.38246
ii)									

26. Resource generation (Rs. in '000):

Activity	I (2011- 12)	II (2012- 13)	III (2013- 14)	IV (2014- 15)	V (2015- 16)	VI (2016-17)	VII (2017- 18)	VIII (2018- 19)	Total
i) Capacity building (Trainin g), Monitori ng, Assessm ent Refinem ent	1443244	2318167	2491560	514321	1099493	1176736	1143174	1100798	11287493
ii) Single Window Centre	-	-	-	-	-	-	1500000	700000	2200000
iii)									
iv)									
v)									

27. Number of new crop varieties evaluated by the KVK scientists and identification of most suited one or two:

Crop/variety	Year of testing	Best suited varieties
Paddy: a. b. c. d.		
Wheat a. b. c. d.		
Groundnut a. b. c. d.		
Others		

28. Supply of seed of new varieties (crop-wise) as sample pack, if any (Provide variety-wise list and name of beneficiaries):

29. Name 3 / 4 technologies (or more) that have created impact in sizable areas & made KVK credible

30. Impact assessment made so far by any dependable agency:

(Submit brief report with remarks under quote)

31. New Initiative, if any

32. Other Programmes (not covered in the format) conducted

33. Details of awards / prize received by the KVK, if any

**BROAD BASING OF FRONT LINE EXTENSION
(2011-12 to 2018-19)**

										(Nos.)
Sl.	Item	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
1	A.I. cases									

2	Animal health care provided									
3	Poultres introduction									
4	Piggery/ rabbitary introduction									
5	Planting material /seedlings produced and distributed									
6	Fodder and grass introduction, ha									
7	Trees introduction(no.)									
8	Wasteland development plan prepared									
9	Watershed development									
10	Consultancy on soil analysis and topographic survey									
11	Consultancy on land use planning and cropping pattern									
12	Improved hand tools and implements introduced									
13	Fishery demonstrations									
14	Any other (Animal health camp.)									

33.Extension Activities Undertaken (Last 8 years) (Numbers)

S.N.	Activity	I (2011-12)	II (2012-13)	III (2013-14)	IV (2014-15)	V (2015-16)	VI (2016-17)	VII (2017-18)	VIII (2018-19)	Total
1.	Field Days	10	2	8	5	6	12	12	15	70
2.	Agril. Exhibition	-	-	2	2	1	5	8	-	18
3.	Farmers' Fairs	1	2	2	1	1	5	9	2	23
4.	Radio Talk	-	2	2	1	3	2	-	-	10

5.	TV show	8	10	10	12	12	10	-	-	62
6.	Film show	6	20	30	50	42	92	25	28	293
7.	Training materials produced (a) Pamphlets (b) Video-cassette/ CD (c) Slides									
8.	Farm Science Club organized	-	1	1	1	-	-	-	1	4
9.	<i>Mahila Mandals</i> Organized	-	1	1	1				2	5
10.	Extension Training meetings organized	-	10	1	2					13
11.	i.Kisan Ghosthi	2	10	10	5	13	26	29	22	117
	ii.Farmers Seminar	-	2	2	2					6
	iii.Lectures delivered as resource persons	24	50	50	100	20	65	12	-	321
	iv.Newspaper coverage	7	12	15	15	23	25	45	42	184
	v.Popular articles	-	2	3	4					9
	vi.Advisory Services	-	48	48	100	677	818	650	804	3145
	vii.Scientific visit to farmers field	86	85	85	100	114	166	160	160	956
	viii.Farmers visit to KVK		500	1000	1500	555	1183	1825	1822	8385
	ix.Diagnostic visits				20	64	72			156
	x.Exposure visits				2	1			5	8
	xi.Animal Health Camp		1	2	2					5
	xii.Soil test campaigns		2	2	2	1	1	9	8	25
	xiii.Self Help Group Conveners meetings		1		1				2	4
	xiv.Celebration of important days (specify)Sankalp se Sidhi Programme on 27/08/18, WSHD on 5 th Dec., Mahila Kisan Diwas on 15 th Oct. Kisan Diwas on 23 rd Dec.						3	3	4	10

Inauguration of PM KISAN Smman Nidhi Prog.										
xv.Farmers'- Scientists' Interaction		1								1
xvi.Technology week	1	1	1	1	2	1	1	1	1	9
Others,if any World Soil Health Day(15-12-17)						1	1	1		3
Krishak Sammelan organized on 11.09.2015					1					1
International Womens day 8 th March					1	1				2
Celebration of PMFBY on 5 th April 2016						1				1

34. Publications made during the QRT period:

Type of Publication	Title and publishers/Journal/Magazine
Research article :	
Technical Bulletin :	
Popular article :	
Electronic Media (CD) :	
Extension Literature :	
Reports published in ICAR Reporters :	
Others, if any	

Annexure I

STATUS OF RESEARCH – EXTENSION LINKAGES AT THE DISTRICT LEVEL

- i. **What kind of mechanism exists for local coordination of the front line extension demonstration between the KVKs and the State Govt.**
- ii. **What is the frequency of Scientific Advisory Committee Meeting for KVK during last 8 years?**
- iii. **No. of monthly workshops organized**
- iv. **Frequency and no. of staff participated in seminars at Zonal, State and National level.**
 - **Zonal level workshop/seminar attended ∴**
 - **National level workshop/seminar :**

- **State level workshop/seminar Whether the local NGO's are involved in KVKs programmes**
- v. **Whether the FPO are promoted and become visible in their activities**
- vi. **Whether the local Mahila Mandal or Farm Science clubs are promoted and become visible in their activities**
- vii. **A brief about the extent of contribution of the officials of various line departments and joint programmes undertaken.**

Annexure II

Impact of KVK in Terms of Agricultural and Animal Productivity, Socio-economic Conditions and Employment Generation during the QRT period in the Adopted villages

Sl. No.	Item	Unit	Prior to KVK	Post KVK activities
1.	Change in cropping intensity 1 2 3 4 Pl Add more if required	(%)		
2.	Change in productivity of 1 2 3 4 Pl Add more if required	(kg/ha)		
3.	Use of HYV (high-yielding varieties) 1 2 3 4 Pl Add more if required	(%)		
4.	Use of fertilizers (NPK) (nutrient) 1. Rice 2. Mustard 3. Jute 4. Sesame 5. Lentil 6. Banana 7. Tomato 8. Brinjal 9. Cauliflower etc Pl Add more if required	(kg/ha)		
5.	Use of FYM and other biofertilizers	(kg/ha)		
6.	Tractor/machinery	(No)		

7.	Change in economic indicators (in adopted villages) (a) Net return/ha/yr (by crop/enterprise) 1.Ric 2.Mustard 3.Jute 4.Sesame 5.Lenti 6.Banana 7.Tomat 8.Potato	(No) Rs.		
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Sd/-
Signature of Head of the KVK
KVK, Bokaro